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U.S. Application No.: 10/519,133

U.S. National Stage of:

International Application No.: PCT/EP2003/006973

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For: Cross-Linked Polyvinyl Acetals

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TRANSMITTAL OF ENGLISH TRANSLATION OF  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:


Enclosed for filing in the U.S. Receiving Office is a copy of the English translation of the International Preliminary Examination Report (4 pages).

Please charge any deficiency or credit any overpayment in the fees that may be due in this matter to Deposit Account No. 08-0380. A copy of this letter is enclosed for accounting purposes.

Respectfully submitted,

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March 10, 2005

Translation

PATENT COOPERATION TREATY

PCT

PCT/EP2003/006973



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

COPY

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KS2002-05WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/006973	International filing date (day/month/year) 01 July 2003 (01.07.2003)	Priority date (day/month/year) 04 July 2002 (04.07.2002)
International Patent Classification (IPC) or national classification and IPC C08F 8/28		
Applicant KURARAY SPECIALITIES EUROPE GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 19 September 2003 (19.09.2003)	Date of completion of this report 15 April 2004 (15.04.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/006973

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

☒ the international application as originally filed

☒ the description:

pages \_\_\_\_\_ 1-25 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☒ the claims:

pages \_\_\_\_\_ 1-15 \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the drawings:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

☐ the sequence listing part of the description:

pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_  
☐ the claims, Nos. \_\_\_\_\_  
☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.  
PCT 03/06973

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims	1-15	YES
	Claims		NO
Inventive step (IS)	Claims	1-15	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-15	YES
	Claims		NO

### 2. Citations and explanations

- D1: US-A-2 332 899 (G. F. D'ALELIO) 26 October 1943  
(1943-10-26)
- D2: EP-A-1 180 529 (WACKER-CHEMIE GMBH) 20 February  
2002 (2002-02-20)
- D3: WO 01 79305 A (CLARIANT GMBH) 25 October 2001  
(2001-10-25), mentioned in the application
- D4: EP-A-1 180 528 (WACKER-CHEMIE GMBH) 20 February  
2002 (2002-02-20)
- D5: EP-A-0 174 479 (HOECHST AG) 19 March 1986 (1986-  
03-19)
- D6: US-A-2 882 161 (J. R. DANN) 14 April 1959 (1959-  
04-14)

1. The present cross-linked polyvinyl acetal as per claims 1 to 5, the accompanying method for its production, the shaped materials that can be produced therewith, and the uses according to claims 6 to 15 are not obvious from the cited prior art (PCT Article 33(3)).

D1 appears rather to point away from a product that can be cross-linked by the reaction of functional groups (here, carboxylic acid- and hydroxyl groups) in the backbone of the copolymer, for the simple

reason that the formation of carboxylic acid groups explicitly does not take place - see, *inter alia*, column 2, lines 10 to 22.

D2 discloses the use of acetalised vinyl alcohol polymers as thickening agents. They are water-soluble (see the problem on page 2, paragraph [0005]), but there is no mention at all of cross-linking.

2. D1 and D2 need not be acknowledged in the description.  
The remaining search report citations are further removed from the subject matter of the application.
3. The polymers as per the invention can be thermally cross-linked at relatively low temperatures and can therefore be used for a variety of uses such as, *inter alia*, also for producing composite safety glasses.  
These results and advantages are considered surprising and support the involvement of the requisite inventive step.